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COVID-19 Pandemic in the United States*

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ABSTRACT

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What is the response of US governors to the COVID-19 pandemic? In this research note, we explore the determinants of implementing stay-at-home orders, focusing on governors' characteristics. In our most conservative estimate, being a Democratic governor increases the probability of implementing a stay-at-home order by more than 50 percent. Moreover, we find that the probability of implementing a statewide stay-at-home order is about 40 percent more likely for governors without a term limit than governors with a term limit. We also find that Democratic governors and governors without a term limit are significantly faster to adopt statewide orders than Republican governors and governors with a term limit. There is evidence of politics as usual in these unusual times.

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Introduction

The COVID-19 pandemic is the most serious and severe threat that countries have faced since World War II. The first outbreak of the virus took place at Wuhan City in the Hubei Province of China in December 2019. The virus then spread to Asia, Europe and North America between January and March 2020. As of March 30, there are more than 700,000 confirmed cases of COVID-19 around the world and more than 34,000 people have died of causes related to the virus.[1] In addition to human losses, the COVID-19 pandemic is causing massive economic damages, which threaten to have consequences larger than those created by the 2008 global financial crisis (Ilzetzki 2020).

In the midst of this unprecedented health crisis, government responses in Asia and Europe have been to implement a lockdown of parts of the country or of the entire country. A lockdown implies that all travel in and out the area is prohibited and people's movements within the area are severely restricted. For instance, the Chinese government locked down Wuhan City on January 23, 2020. The Italian government was the first to lockdown the entire country—on March 11—followed by Spain, France, and many other European countries. The evidence has so far suggested that locking down is one of only a few instruments available to halt the spread of COVID-19, absent a vaccine. Indeed, the number of new COVID-19 cases in Wuhan City has been zero over the past few days, and the city has been now reopened. However, these measures come with sizeable economic costs and with unusual limitations of civil rights, especially for liberal democracies.

Given this international context, what was the response of US governors to the COVID-19 pandemic? This question is particularly important for two reasons. First, the US is now the country with the largest number of COVID-19 cases, overtaking China and Italy. Second, different US states responded differently to the outbreak. As of March 30, 28 states had issued a statewide order urging their citizens to stay home, whereas 14 states had issues orders in part of the state. In this research note, we explore the determinants of issuing stay-at-home orders, focusing on governors

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[1] Data come from https://coronavirus.jhu.edu/map.html [consulted on March 30, 2020].

′ characteristics. In particular, we focus on their ideology, on whether they face reelection, and on their gender and their age.

After controlling for deaths related to COVID-19 and other socioeconomic variables, we find that Democratic governors are significantly more likely to implement a statewide order. In our most conservative estimate, being a Democratic governor increases the probability of implementing a stay-at-home order by more than 50 percent. Furthermore, states with Democratic governors are quicker to implement statewide orders than states with Republican governors. Moreover, we find that the probability of implementing a statewide stay-at-home order is about 40 percent more likely for governors without a term limit and that governors without a term limit are faster to implement stay-at-home measures than governors with a term limit. However, both effects are significant only when controlling for ideology. Other governors′ characteristics bear no effect in explaining the implementation and the speed of the lockdown, a result in line with Ferreira and Gyourko (2014).

Our results seem to indicate that Democratic governors place special emphasis on health and safety, whereas Republican governors are particularly concerned about the economic costs of stay-at-home measures. Our results confirm findings from previous studies on the role of ideology in explaining policy-making in the US (Maclean et al. 2018, Poptrafke 2018). Moreover, the results for governors with a term limit are in line with the seminal work by Besley and Case (1995). When governors do not face reelection, they are less concerned about their reputation and, in turn, this has significant effect on their economic policy choices, e.g. governors with limits reduce state spending and the minimum wage. The same seems to apply to policies concerning health and safety. In sum, national and subnational politics are, and will continue to be, of paramount importance in explaining responses to the COVID-19 pandemic.

Data

Our first outcome variable captures whether a state had issued statewide orders forcing its citizens to stay home as of March 30, 2020. Our second outcome captures how many days had passed since the state implemented the stay-at-home order, starting from March 19, 2020, the day on which

California has passed the first statewide order in the US.[2] States that had not implemented a statewide as of March 30, 2020 are right-censored to use the language of survival analysis. Data comes from the *New York Times*.[3] Figure 1 shows the geographical distribution of our outcome variable as of March 30, 2020.

Figure 1. S*tatewide order* (1 if a statewide order) as of March 30 2020.
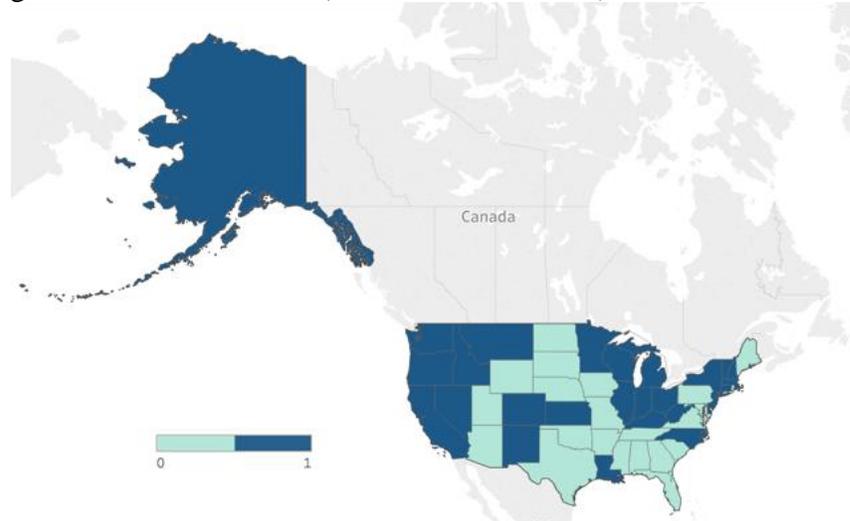
Our main covariates are a series of variables capturing governors' characteristics. In particular, we measure (1) governors' ideology, i.e. whether the governor is a Democrat (*Democratic Governor*); (2) whether the governor faces a term limit, i.e. she cannot be reelected (*Term Limit*); (3) governors' gender, i.e. whether the governor is female (*Female Governor)*; and (4) governors' age (*Governor Age*). Data come from online personal biographies of governors who are currently in office. Figures 2 and 3 show the geographical distribution of *Democratic Governor* and *Term Limit*.

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[2] California was the first state to implement a statewide order, on March 19, 2020.
[3] Data are available at https://www.nytimes.com/interactive/2020/us/coronavirus-stay-at-home-order.html [last consulted on March 30, 2020].

Figure 2. *Democratic Governor* (1 if a governor is a democrat).
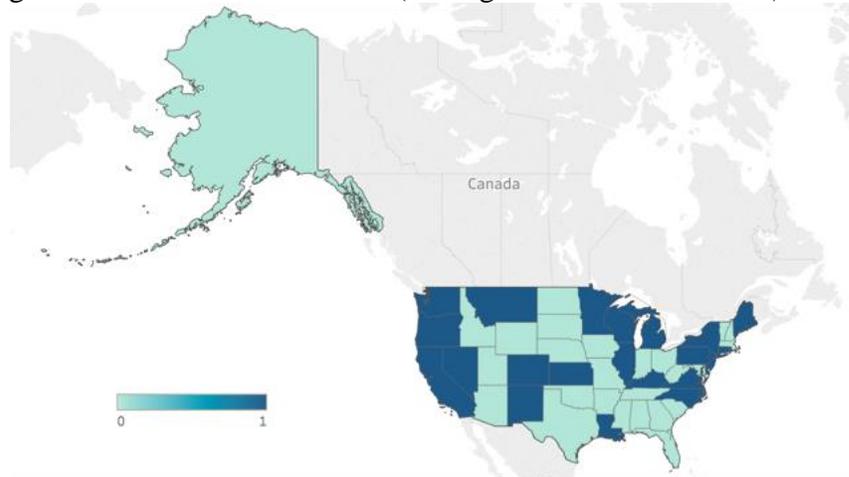
Figure 3. *Term Limit* (1 if a governor faces a term limit).
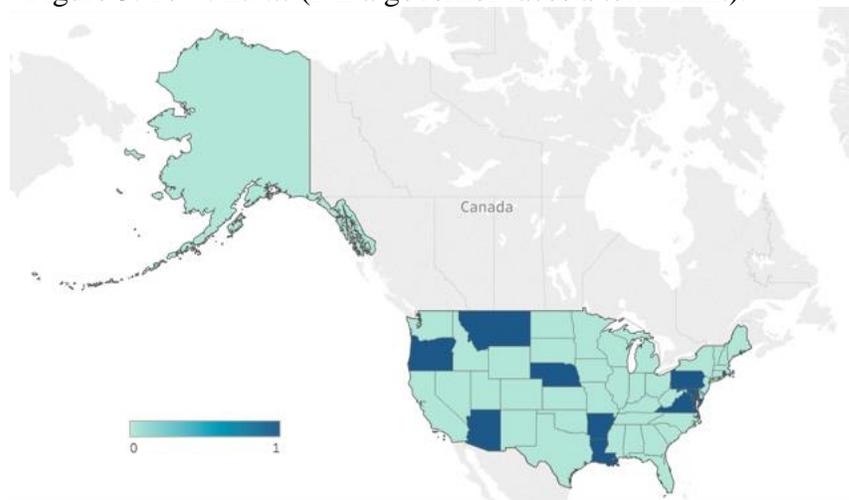
Additionally, we control for the number of deaths related to COVID-19 as of the issuing of the stay-at-home orders (*COVID-19 Deaths*). We manually collected data on COVID-19 cases and deaths from each state's Department of Public Health (or equivalent) or other governmental sources. For states without publicly available data, we relied on local news reports. Our number of deaths is exactly the same as those shown by the COVID Tracking Project (https://covidtracking.com/). Figure 4 shows the geographical distribution of *COVID-19 Deaths*.

Figure 4. *COVID-19 Deaths*.
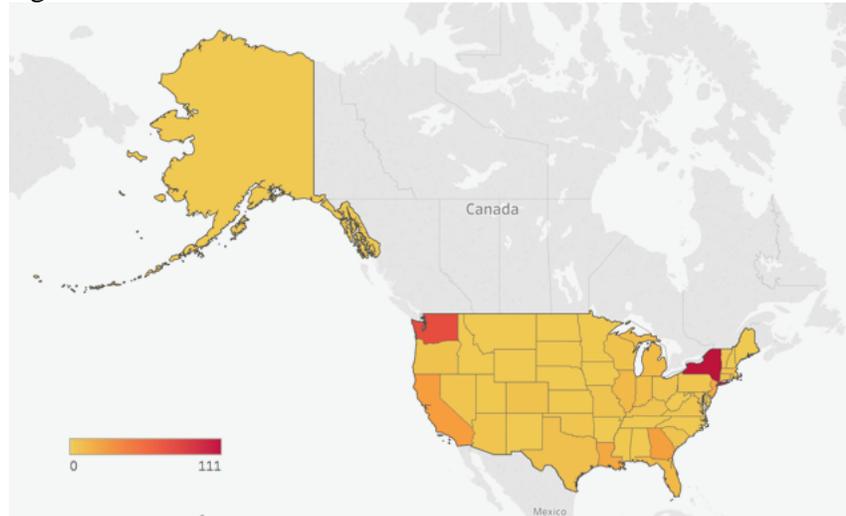
Furthermore, we control for (the log of) population of each state and for the level of unemployment in each state for the year 2019. The first variable accounts for concerns about the number of people who could possibly contract the virus. The second variable controls for economic conditions of the state. Population data comes from the 2017 American Community Survey and the 2019 state unemployment rate from the Bureau of Labor Statistics. Table 1 shows the descriptive statistics of our variables.

Table 1. Descriptive statistics.

Variable	Obs	Mean	Std. Dev.	Min	Max
Stay-home Order	50	0.55	0.50	0	1
Democratic Governor	50	0.48	0.50	0	1
Term Limit	50	0.22	0.42	0	1
Female Governor	50	0.18	0.39	0	1
Governor Age	50	60	9	41	75
COVID-19 Deaths	50	7	19	0	111
Population	50	15.16	1.04	13.27	17.49
Unemployment	50	3.52	0.83	2.20	5.80

Methodology

Our first econometric model for testing the effect of governors' characteristics on the probability of issuing a stay-at-home order is as follows:

$$P(\text{Stay Home}_s = 1) = \phi\, (\beta_1 + \beta_2\, X_s + \beta_3 Z_s + \varepsilon_s) \tag{1}$$

where s is a state, including both states with and without the stay-at-home policy. X_s is a set of variables for state governors' characteristics (i.e. ideology, age, gender, and term limit). The dependent variable scores 1 if the state had issued a statewide order to stay home as of March 26, 2020; 0 otherwise. Z_s is a set of controls (i.e. COVID-19 deaths, population, and unemployment) at the state level, which we include in every estimate. β_1, β_2, and β_3 are the coefficients of the covariates and the constant, whereas ε is the error term. We run OLS models with robust standard errors.[4]

Our second econometric model for testing the duration of non-implementing a statewide order is as follows:

$$\text{Hazard}_s = H_0(s)\, (\gamma_1\, X_s + \gamma_2 Z_s + \varepsilon_s) \tag{2}$$

While all the covariates are the same as in equation 1, the dependent variable measures the number of days taken by a state to implement a stay-at-home order since March 19, 2020 (up to March 30). We run a Cox model with robust standard errors. To ease the interpretation of the results, we report the coefficients rather than the hazard ratios.

Findings

Table 2 reports our main results from the OLS regressions. Since we have only 50 observations, we start including covariates parsimoniously, while still controlling for COVID-19 deaths and population. In particular, we consider governors' characteristics first alone (columns 1–4) and then simultaneously (column 5). Furthermore, in column 6 we include also unemployment, which accounts for the economic conditions of the state.

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[4] We are unable to run logisitic or probit regressions, since the variable *term limits* predicts perfectly the 0 outcome and therefore we would lose those observations.

Table 2. Probability of implementing a stay-home order.

	(1)	(2)	(3)	(4)	(5)	(6)
	OLS					
	Pr(Stay-home=1)					
Democratic Governor		0.511***			0.637***	0.620***
		(0.129)			(0.093)	(0.097)
Term Limit	-0.226				-0.389***	-0.396***
	(0.167)				(0.129)	(0.131)
Female Governor			-0.122		-0.322**	-0.309*
			(0.198)		(0.154)	(0.155)
Governor Age				-0.004	-0.002	-0.002
				(0.008)	(0.007)	(0.007)
COVID-19 Deaths	0.006***	0.004*	0.007***	0.007***	0.002	0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)
Population	-0.042	-0.058	-0.047	-0.041	-0.090	-0.089
	(0.076)	(0.072)	(0.077)	(0.077)	(0.066)	(0.066)
Unemployment						0.064
						(0.081)
Constant	1.208	1.166	1.256	1.348	1.908*	1.657
	(1.155)	(1.100)	(1.166)	(1.310)	(1.132)	(1.234)
Observations	50	50	50	50	50	50
R-squared	0.088	0.299	0.062	0.057	0.445	0.455

Note: OLS estimates. Robust standard errors are in parentheses. Each column shows the results of one regression. The dependent variable is a dummy for whether the state issued an order to stay home as of March 30, 2020. Significant at the ***[1%] **[5%] *[10%] level.

Among governors' characteristics, *Democratic Governor* is always significant and with a positive sign. The estimates suggest that Democratic governors are 50 percentage points more likely to have ordered their citizens to stay home in our most conservative model. The estimate climbs to more than 60 percent in our full model specifications.

Term Limit is statistically significant, but only when we control for *Democratic Governor*. The estimates suggest that governors with a term limit are about 40 percentage points less likely to have ordered their citizens to stay home. Governors' age and gender do not explain much of the

decision of issuing the stay-at-home order. As expected, the coefficient of *COVID-19 Deaths* is always positive and significant.

These results are confirmed when we run Cox models (see Table 3). Democratic governors are more likely to implement stay-at-home orders, and if they do so, they are quicker than Republican governors. The coefficient is always significant and the magnitude of the effect is sizable: among governors who implement a statewide order, Democratic governors do so a day and a half quicker than Republican governors. Given that our analysis covers ten days, the magnitude of the effect is remarkable. Similar to the results in Table 2, *Term Limit* has a negative sign, but it is only significant when accounting for *Democratic Governor.*[5] The other governors' characteristics are not significant, whereas the coefficient of *COVID-19 Deaths* is always positive and significant as expected.

Table 3. Speed of implementing a stay-home order.

	(1)	(2)	(3)	(4)	(5)	(6)
	Cox Model					
	Hazard Rate of Stay-home Order					
Democratic Governor		1.303***			1.600***	1.530***
		(0.419)			(0.386)	(0.410)
Term Limit	-0.582				-1.006**	-1.058**
	(0.533)				(0.474)	(0.482)
Female Governor			-0.310		-0.777	-0.737
			(0.548)		(0.494)	(0.469)
Governor Age				-0.007	-0.011	-0.009
				(0.018)	(0.017)	(0.019)
COVID-19 Deaths	0.027***	0.023***	0.028***	0.028***	0.021***	0.020***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.007)
Population	-0.051	-0.033	-0.079	-0.054	-0.174	-0.174
	(0.223)	(0.245)	(0.229)	(0.223)	(0.243)	(0.252)
Unemployment						0.402
						(0.274)
Observations	50	50	50	50	50	50

[5] A test based on Schoenfeld residuals indicates no concerns of violation of the proportional hazard assumption.

Note: Cox model estimates. Robust standard errors are in parentheses. Each column shows the results of one regression. The dependent variable measure the number of days taken by a state to implement a sty-home order since March 19 2020 (up to March 30). Significant at the ***[1%] **[5%] *[10%] level.

Conclusion

Our results show that there is evidence of politics as usual in these unusual times. Looking beyond the US, our findings indicate that, while the pandemic is a global phenomenon, its impact is heavily affected by policies implemented by national and subnational governments. As Hobbes warned, the arbitrariness of individual political judgement is at the heart of all politics. This is even truer in the midst of a pandemic.

Bibliography

Besley, T., & Case, A. (1995). Does electoral accountability affect economic policy choices? Evidence from gubernatorial term limits. *The Quarterly Journal of Economics*, 110(3): 769-798.

Ferreira, F., and J. Gyourko (2014) Does gender matter for political leadership? The case of US mayors. *Journal of Public Economics,* 112: 24-39.

Hobbes, T. (2016) *Thomas Hobbes: Leviathan (Longman Library of Primary Sources in Philosophy).* Routledge.

Ilzetzki, E. (2020) COVID-19: The economic policy response. VoxEU.org, March 28, 2020.

Maclean, J. C. M. Oney, J. Marti J. and Sindelar (2018) What factors predict the passage of state-level e-cigarette regulations? *Health economics*, 27(5): 897-907.

Potrafke, N. (2018) Government ideology and economic policy-making in the United States—a survey. *Public Choice*, 174(1-2): 145-207.

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